

# EXHIBIT E



**KC ENGINEERING, P.C.**  
4300 S. LAKEPORT  
SIOUX CITY, IOWA 51106

DATE: October 2, 2012

TO: Mr. Chad Kramer  
Sioux Steel Company  
196 ½ E 6<sup>th</sup> Street  
Sioux Falls, SD 57101

RE: **ADDENDUM LETTER #1** - Engineering Analysis and Design Review of 18' Diameter and 30' Diameter Hopper Cone Assemblies

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Dear Mr. Kramer,

In accordance with our conversation on 9/28/2012, we have revised the column load calculations for the 30' Diameter Hopper. The initial hopper columns load calculations in our report dated 8/28/2012 took into account the bin stiffener loads, which are a function of the grain supported by friction on the bin walls, and the hopper loads, which are a function of the total grain in the bin. This approach is slightly conservative for the design of the columns as some of the bin stiffener load is counted twice.

The attached pages show separate column load calculations, without the double counting. With these new calculations, the columns for the 30' Diameter Hopper, as currently detailed, **are adequate**.

If you have any questions regarding this analysis, please contact me at (712) 252-2100.

Respectfully submitted,

Derek Matthies, EI  
KC Engineering, P.C.

Reviewed by:

Jason P. O'Mara  
Vice President  
KC Engineering, P.C.



**KC ENGINEERING CO.**  
4300 So. Lakeport, Suite 205  
Sioux City, IA 51106  
(712) 252-2100  
Fax 252-0346

PROJECT NAME: 30'  $\phi$  Hopper Analysis

PAGE 1 OF 1 DATE: 10/1/12

LOCATION: Sioux Steel

PROJECT #: 61165

SUBJECT: Column Loads

DESIGNER: DM

### • Loads

Dead Load : 3.1 k/column (1.91 k for Bin, 1.19 k for Hopper)

Live Load : Grain = 55.3  $\frac{\text{lb}}{\text{ft}^2}$

$$1. \text{ Bin Top} \rightarrow \frac{1}{3} \pi r^2 h \gamma_g = \frac{1}{3} \pi 15^2 (6.4) (55.3) / 1000 = 83.4 \text{ k}$$

$$2. \text{ Bin} \rightarrow \pi r^2 h \gamma_g = \pi 15^2 (51.3) (55.3) / 1000 = 2005.3 \text{ k}$$

$$3. \text{ Hopper} \rightarrow \frac{1}{3} \pi r^2 h \gamma_g = \frac{1}{3} \pi 15^2 (15) (55.3) / 1000 = 195.5 \text{ k}$$

$$\text{Total} = 2284.2 \text{ k} / 20 = 114.2 \text{ k/column}$$

### • Load Combination

LC # 2 : DL + LL

$$P = 117.3 \text{ k}$$

$$M = 17.0 \text{ k-ft}$$

\*Note: Capacities from previous calculations

OK

$$\frac{117.3 \text{ k}}{191.1} + \frac{8}{9} \left( \frac{17.0}{49} \right) = 0.92 < 1.0$$